

RECLAMATION

Managing Water in the West

Biological Assessment for the Giant Garter Snake Glenn-Colusa Irrigation District Stony Creek Fan Aquifer Performance Testing Plan



U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

July 2008

Section 1 Introduction

1.1 Introduction

This biological assessment (BA) describes the groundwater production well installation and testing for the Glenn-Colusa Irrigation District Stony Creek Fan Aquifer Performance Testing Plan (project). The Bureau of Reclamation is partially funding the project through a grant (Agreement Number 06FG202103) with the Glenn-Colusa Irrigation District.

The purpose of this BA is to review the proposed action in sufficient detail to determine its potential effects to the giant garter snake (GGS) (*Thamnophis gigas*). This document was prepared in accordance with the legal requirements set forth under Section 7 of the Endangered Species Act (ESA) (16 U.S.C. 1536(c)). A species list was generated on June 10, 2008 from the Sacramento Fish and Wildlife Office website at http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm. The list is included in Appendix A. Based on a California Natural Diversity Database (CNDDDB) search for species found on the Fish and Wildlife Service (FWS) list, Reclamation determined that the GGS is the only species requiring further analysis (Appendix A Figures 1-5).

A draft environmental assessment (EA) has been prepared by Reclamation in accordance with the National Environmental Policy Act (NEPA) to disclose any impacts associated with the proposed action. Following public review of the draft EA and upon completion of consultation under Section 7(a)(2) of the Endangered Species Act (ESA) a finding of no significant impact (FONSI) is expected to be completed for the proposed action.

1.2 Background

The Stony Creek Fan (SCF) Partners are proposing to install and test seven high production groundwater wells within the Glenn-Colusa Irrigation District (GCID), Orland Unit Water Users Association (OUWUA) and Orland-Artois Water District (OAWD) service areas in Glenn County, California. Exact well locations are described in detail in Section 1.3.

In addition to funding from Reclamation, SCF Partners have received funds from the California Department of Water Resources (DWR) for this project. In November 2007, the SCF Partners filed a Notice of Exemption pursuant to the California Environmental Quality Act (CEQA).

This short term test project will allow the SCF partners to gather pertinent information to help better understand the complex aquifer systems in the Sacramento Valley and how they might be managed for conjunctive use in the future.

1.3 Action Area

There are seven test production groundwater wells that would be installed under the proposed action. The proposed action areas for installation of the test groundwater wells

are small locations sited in either the GCID (3 sites), OUWUA (2 sites), and OAWD (2 sites) service areas, Glenn County, California.

Each proposed well location would occur within area of approximately 100 feet by 100 feet (0.23 acres) and the completed test production well facilities would occupy a smaller area within the construction zone. Existing roads would be used to access the various proposed well locations. Road improvements or temporary roads are not necessary. Canals, drains, and rice fields that are within 200 feet of the proposed well locations, are reviewed herein to consider potential effects to GGS.

General Habitat in the Project Area.

Developed/Disturbed

Developed and disturbed areas include major roads, highways, and buildings and structures within more urban areas, but also facilities and access roads which are located throughout agricultural areas near each proposed well location. Also included within this category are the unpaved turnouts and shoulders of dirt access roads.

Agriculture

Agriculture, irrigated with water diverted from the Sacramento River or Stony Creek watershed, dominates the surrounding landscape. Major crops include rice and deciduous orchard (walnut, almond, olive). These crops are irrigated by either a series of canals (OUWUA and GCID) or through underground piping (OA) that delivers water from the Sacramento River or Stony Creek. All ditches owned and managed by the SCF Partners are actively maintained, and generally lack dense upland or aquatic vegetation. The delivery canals within the action area are generally well maintained and concrete lined, and support minimal vegetation. There is one unlined drainage ditch supporting a low density of emergent aquatic vegetation that occurs in the vicinity of proposed well #5 (Photo 7).

All proposed well locations are located in or adjacent to agriculture. The delivery canals that are proposed for conveyance of groundwater, are surrounded by lands in active crop production. The GCID canal is not a lined canal, but supports a maximum flow capacity of 3,000 cubic feet per second (cfs).

DESCRIPTION OF PROPOSED WELL LOCATIONS

Proposed Well #1 Orland Unit

T22N, R2W, SEC. 18

Location: Located on Lateral 130 in Orland Unit, just south of County Road 9. General habitat in the area consists of agricultural. There is an almond orchard to the east, pasture to the west, and immediately north are the county road and railroad tracks. The canal is part of the Orland Unit infrastructure. It is a lined canal. There is a maintenance road that would be used to access the site for construction.

In general, the area is highly disturbed and intensively managed for agriculture. There are no rice fields or adjacent ditches within 200 feet that would provide habitat for GGS. No wetlands occur within the area.



Photo 1 Well #1 Location

Proposed well #2 Orland Unit

T22N, R2W, SEC. 18

Proposed Well #1 Orland Unit

Location: Located on lateral 60 on Cleek Ranch properties, immediately north of County Road 18 and just south of County Road 9. General habitat includes a young almond orchard to the immediate east, a gravel maintenance road running north and parallel to lateral 60 canal (where water will be pumped), a walnut orchard to the west and the canal and County Road 18 on the southern border. A young almond orchard lies to the south of county road 18. The arrow in figure 3 points to the proposed well location, which is just out of sight in Figure 2 (to the right). There are no rice fields or adjacent ditches within 200 feet that would provide habitat for GGS. No wetlands occur within the area.



Photo 2 Slightly east of well #2 north view; lateral 60 to the west



Photo 3 Location of well #2

Proposed well #3 Orland-Artois

T22N, R2W, SEC. 30

Location: Located on County Road 20, east of County Road P and west of County Road S within the Orland-Artois service area. The exact location of the well is north of County Road 20 in a barren almond orchard. Across County Road 20 to the southwest there is an almond orchard and to the southeast there is an olive orchard. The yellow arrow pointing at the blue stick in figure 4 is the exact location of proposed well #3. There are no rice fields or adjacent ditches within 200 feet that would provide habitat for GGS. No wetlands occur within the area.



Photo 4 Well #3 Location

Proposed well location #4 Orland Artois
T21N, R2W, SEC. 04

Location: Located south of County Road 24 and east of County Road S in the Orland Artois Water District service area. The well would be installed on the southern border of an almond orchard. There is an access road from CR 24 to this site. A walnut orchard lies to the south/southeast of the proposed well location. An olive orchard lies to the southwest. The orchards are intensively managed. The gravel access road is well maintained and heavily traveled. There are no rice fields or adjacent ditches within 200 feet that would provide habitat for GGS. No wetlands occur within the area.



Photo 5 Well #4 Location

Proposed well location #5
HAMILTON UNIT, DIVISION 2

Location: Located off of west Highway 45, adjacent to the GCID main canal. The proposed well site is situated to the east of the main canal. On the eastside of the proposed well location are rice fields. There is a small ditch approximately 50 to 75 feet from the proposed well location. The ditch has characteristics which could be considered potential GGS habitat (Photo 6).



Photo 6 Potential GGS habitat



Photo 7 Well #5 Location

Proposed well location #6

HAMILTON UNIT, DIVISION 2

Location: Located northwest of Highway 45 and County Road 24 adjacent to the Glenn-Colusa siphon, west of the Stony Creek head gates and south of Stony Creek. A house is located to the east of the proposed well location. The GCID main canal and its access road lies to the south. On the west is the GCID main canal siphon. The area is highly disturbed, as vehicles travel to and from the house and also to the head gates for maintenance. The area lacks suitable habitat for giant garter snake. There are no rice fields or adjacent ditches within 200 feet that would provide habitat for GGS. No wetlands occur within the area.



Photo 8 Well #6 location



Photo 9 West view, well #6



Photo 10 East view, well #6

Proposed well location #7

Location: Located northwest of Highway 32 and north of Highway 45 on the west levee of the GC main canal near the Hamilton Union High School. To the north is the levee road, to the immediate west weeds, and 500 feet to the west there is an orchard. To the east is the Glenn Colusa main canal and to the south is the levee road. The area is highly disturbed and there are no rice fields or adjacent ditches within 200 feet that would provide habitat for GGS. No wetlands occur within the area.



Photo 11 Well #7 power line location



Photo 12 Well #7 North View



Photo 13 Well #8 South View

Section 2 Description of Proposed Action

The SCF Partners plan to drill up to five test holes and construct up to seven test-production wells. Appendix A contains figures showing the proposed locations for each test production well. It is anticipated that the seven test-production wells will produce groundwater from geologic units at depths ranging from approximately 700 to 1,500 feet below ground surface (bgs). The anticipated geologic units from which groundwater will be pumped are the Plio-Pleistocene Tehama and Tuscan Formations.

The test-production wells will be drilled using a large truck-mounted reverse circulation rotary drilling rig equipped with a mud pump, pipe rack, and drilling fluid holding tank/shaker system.

Test-production well construction at each site will occur 24 hours per day, with lights necessary during night activities, seven days per week for approximately one week. Other drilling and testing activities will be conducted during normal work hours (8am to 5pm). Additional support vehicles including a water tender, front-end loader, pipe truck, and pickup trucks will be parked on-site. The drilling rig and associated equipment will occupy an area of approximately 100 feet by 100 feet. Access for these vehicles will be directly off the adjacent paved/unpaved roads. No improvements for site access will be required. No off-site discharge of drill cuttings or fluids will occur during drilling. Drill cuttings and inert bentonite clay, produced during drilling operations, will be contained in an on-site settling pond (12 feet long, 8 feet wide, 4 feet deep) and spread on site in an approved location upon well completion or may be hauled away if said material is not needed on site. The surface completions will consist of an 8 by 10 feet concrete pad, pump-house enclosure and 20 inch discharge pipe. The GCID and OUWUA wells will be located adjacent to irrigation canals. The discharge pipes of the GCID and OUWUA wells will be routed from the well sites to the canals, then down the canal bank slopes. Discharge will be at the edge of the canal water prism. The discharge piping for OAWD wells will be plumbed from each well site into an existing underground pipeline conveyance system. The typical test-production well construction diagram is shown in Figure 6 Appendix A.

Drilling of test holes and construction of test-production wells is scheduled to begin in fall 2008 and be completed in early 2009.

Aquifer performance testing phases will occur after construction is completed. Each phase is briefly described below.

- Phase 1 – At the conclusion of test-production well construction at each location, specific capacity and hydraulic parameters would be estimated by performing 12 to 24 hour constant rate testing at each well. Information gathered during Phase 1 would be used to help ensure Phase 2 pumping rates and durations result in measurable water level changes at observation wells, but do not result in significant impacts.
- Phase 2 – Multi-day tests would be conducted at each well individually to refine hydraulic parameter estimates and assess potential groundwater level changes. Information gathered during Phase 2 would be used to help ensure Phase 3 pumping rates and durations result in measurable water level changes at observation wells, but do not result in significant impacts.
- Phase 3 – Potential basin-scale effects would be measured by performing up to two seasons of operational testing. Phase 3 testing would involve simultaneous operation of multiple wells, because the intent is to observe the effects of their combined operation on the aquifer system.

Frequent and detailed monitoring would be performed during each phase of the testing to meet data collection requirements.

The data and information compiled during implementation of this aquifer testing plan would be used as input prior to SCF Partners approving the integration of the wells into the SCF Partners' water supply systems for long term use and production.

Legal and Statutory Authority

The construction of high production groundwater wells to determine if and how conjunctive use programs could improve water supply reliability is authorized by Public Law 103-109 Section 205 of the FY 2006 Water and Energy Development Act. Section 205 of this Act states that "The Secretary of the Interior.....is authorized to enter into grants, cooperative agreements, and other agreements with irrigation or water districts and States to fund up to 50% of the cost of planning, designing, and constructing improvements that will conserve water, increase water use efficiency or enhance water management through measurement or automation at existing water supply projects within the states identified in the Act of June 17, 1902....."

2.1 Proposed Management Practices

Only proposed well location #5 within GCID service has the potential for GGS habitat, therefore, the management practices described in this Section shall only apply to well #5.

The following are standard avoidance and minimization measures to employ during construction activities in or near GGS habitat.

1. Avoid construction activities within the banks of potential GGS aquatic habitat. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
2. Construction activity within known habitat areas should be conducted between May 1 and October 1. This is the active period for GGS and direct mortality is lessened because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.
3. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided GGS habitat within or adjacent to the project area as Environmentally Sensitive Areas. These areas should be avoided by all construction personnel.
4. Construction personnel will receive Service-approved worker environmental awareness training. This training instructs workers to recognize GGS and their habitat(s).
5. 24-hours prior to construction activities, the project area should be surveyed for GGS by a Fish and Wildlife Service approved biologist. The survey of the project area will be repeated if a lapse in construction activity of two weeks or great has

occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the Service immediately by calling (916) 414-6620.

6. After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions.

A season is defined as the calendar year period between May 1 and October 1, the active period for giant garter snakes, when mortality is less likely to occur.

Section 3 Environmental Baseline

3.1 Past and Present

GCID currently manages the location adjacent to proposed well #5 for agriculture. The area is bound by rice fields on the east. The proposed well location is bound by GCID's main canal on the west. GCID's main canal was constructed in the late 1800's and has been actively maintained for weed and rodent control. This section of the main canal is accessed several times a day by GCID personnel. The lands adjacent to the main canal have historically been in rice production, however, there are times, during short water supply, when those fields were temporarily fallowed or planted in a less water intensive crop such as wheat. During this project, the fields (to the east) will be in rice production.

The area where construction would occur is gravelly and does not support burrows or crevices that could be used as hibernaculae by GGS. Additionally, there is not emergent aquatic and emergent vegetation at the exact proposed location for construction. The drain of particular concern contains small amounts of aquatic vegetation. The drains terminus is perpendicular to the proposed construction area for well #5. From the westernmost terminus the drain runs eastward about a quarter mile then intersects with a drain flowing north to south parallel to Highway 45. The drain continues about a quarter mile south of the intersection point (of the drains), turns eastward and flows underneath Highway 45.

3.2 Potentially Affected Species

3.2.1 Giant Garter Snake

GGS (*Thamnophis gigas*), is listed as a threatened species under the ESA (58 FR 54033, October 20, 1993).

GGS preys primarily on aquatic species such as fish and amphibians. Generally active from April through September, the giant garter snake breeds from March into May, and again briefly in September. Young are brooded internally by females, who give birth to live young from late July into September. Young disperse into dense cover and reabsorb

their yolk sacs, then begin feeding on their own. They reach sexual maturity in three to five years.

The GGS is endemic to wetlands of California's Central Valley. This snake inhabits irrigation and drainage canals, rice lands, marshes, sloughs, ponds, small lakes, low-gradient streams, and adjacent uplands. The snake requires enough water during its active season to maintain high densities of prey; emergent wetland vegetation for cover and foraging; and adjacent uplands and opening in streamside vegetation for basking sites. Higher uplands are used for cover and refuge from floodwaters during its non-active season. The giant garter snake is typically absent from wetlands with sand, gravel, or rock substrates, and from riparian woodlands.

Giant Garter Snake Habitat. The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, other waterways and agricultural wetlands such as irrigation and drainage canals and rice fields, and the adjacent uplands. Essential habitat components consist of (1) adequate water during the snake's active period (i.e., early spring through mid-fall) to provide a prey base and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; (3) upland habitat for basking, cover, and retreat sites; and (4) higher elevation uplands for cover and refuge from flood waters. A basic GGS habitat unit will incorporate 2.00 acres (0.81 hectares) of surrounding upland for every 1.00 acre (0.40 hectare) of aquatic habitat. The 2.00 acres (0.81 hectares) of upland also may be defined as 218 linear feet (66 meters) of bankside habitat which incorporates adjacent uplands to a width of 200 feet (61 meters) from the edge of the bank.

Essential habitat requirements for GGS include having adequate water during the snake's active period (early spring through mid-fall) to provide a prey base and cover; emergent herbaceous wetland vegetation, such as cattail and bulrushes, for cover and foraging habitat; adequate adjacent upland habitat for basking, cover and retreat sites, and higher elevation uplands for cover and refuge from flood waters (EDAW 2006).

Another key requirement of the GGS includes maintenance of connectivity between habitats. GGS rely on canals and ditches as movement corridors. These corridors provide important habitat, and are used during daily movement within a home range. GGS are mobile and adapt to changes in their environment. GGS have been reported traveling over one to two miles in a day. Wylie et al. (1997) documented that a GGS will move five miles into surrounding rice fields from marsh and canal habitats that were dewatered during summer. GGS are able to exploit previously unoccupied or newly created habitats readily (USFWS 1999).

Radio telemetry studies have established that home ranges for GGS in the Colusa National Wildlife Refuge range from 1 to 9,251 acres with seasonal ranges of up to 150 acres. Most GGS activity within these home ranges is concentrated along canals, sloughs, and the edge of aquatic habitats. (USFWS 2006) GGS inhabit canals primarily between April to November.

The width of uplands used by GGS varies considerably. Many summer basking and refuge areas used by GGS are immediately adjacent to canals and other aquatic habitats and may even be located in the upper canal banks. USFWS has considered 200 feet as the width of upland vegetation providing habitat along the borders of aquatic habitat for GGS (USFWS 2006). GGS also seek refuge in upland burrows during hot summer weather and have been documented up to 164 feet from aquatic habitat during this time. GGS primarily use only the margins of rice fields. In a dynamic habitat, such as GCID, GGS frequently move in response to changing conditions in their rice, marsh, canal and ditch habitats, especially during the dry summer months. Connectivity between these areas is thus extremely important for snake survival and reproduction (USFWS 2006).

3.2.2 Historical and Current Distribution

Historically, the GGS ranged from Kern County north along the Central Valley to Butte County, with a gap in the central part of the valley. Habitat would have been roughly the area now in rice in the Sacramento Valley, essentially reaching northward to about Stony Creek on the west and Big Chico Creek on the east. Currently, it ranges from Glenn County to the southern edge of the San Francisco Bay Delta, and from Merced County to northern Fresno County.

The known range of the GGS has changed little since the time of listing. In 2005, three GGS were observed at the City of Chico's wastewater treatment facility, approximately ten miles north of what was previously believed to be the northernmost extent of the species range.

In 1996 Wylie et al. surveyed rice fields in the Butte Basin near Butte Sink, but failed to find GGS. Three occurrences have been recently discovered in the vicinity of the City of Chico in Butte County. The northernmost sighting extends the extant range of the species to the north by approximately 9.5 miles.

GGS have been found in the Colusa Basin, south of the proposed project area). The United States Geological Survey (USGS) has conducted trapping surveys of GGS at the Sacramento National Wildlife Refuge Complex. GGS were observed at each of the federal wildlife refuges (Colusa, Delevan, and Sacramento). It is likely that GGS occur outside of Refuge lands in the adjacent rice production areas.

A California Natural Diversity Database search for the Hamilton City, Orland, Foster Island and Kirkwood USGS 7.5 minute quadrangles indicate no presence or sightings of GGS (June 2008). (Appendix A Figures 1-5). The USGS 7.5 minute quadrangle for Ord Ferry indicated presence of GGS on April 20, 2005. This GGS sighting is approximately 4-5 miles to the east of the proposed well #5 location. There is not habitat connectivity between the sighting and proposed well #5.

3.2.3 Reasons for Decline and Threats to Survival

The primary threats to the GGS continue to be habitat loss and degradation. For example, the American Farmland Trust projects a loss of more than one million acres of Central Valley farmland to urbanization by the year 2040 if current changes in land use continue. This farmland includes land that is cultivated in rice. The relatively abundant populations of GGS in the Sacramento Valley may reflect the expansion of available habitat that is provided from rice cultivation. Dependence of the Sacramento Valley populations on agricultural croplands leaves the GGS vulnerable to wide-scale habitat loss in the event of changes in agricultural management such as a change in crops or fallowing large areas of rice fields or encroaching urbanization, which may inhibit rice cultivation.

Destruction of habitat has virtually extirpated the GGS in the San Joaquin Valley whereas the introduction of new predators such as the bull frog, largemouth bass, and catfish have been major factors in the Sacramento Valley, along with changes in water quality, urbanization, and adverse land management practices. Pesticide and fertilizer runoff from agriculture, for example, have been cited as mortality sources for some of this snake's prey. Grazing of vegetation along water sources also threatens this snake (FWS, 1999)

Section 4 Effects Analysis for GGS

Under Federal Endangered Species Act (16 USC 1531-1544), direct effects are those that are caused by the proposed action and occur at the time of the action. Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside of the area directly affected by the action. Interrelated and interdependent effects of the action are those effects of interrelated and interdependent actions which are generally non-Federal. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

Construction of wells 1, 2, 3, 4, 6, and 7 would not affect GGS or GGS habitat. The snake does not occur in those areas and there is not suitable GGS habitat found near the construction action areas for those wells. Well #5 is the only location which may affect GGS.

Direct Effects of the proposed action

Construction of proposed well #5

There would be no direct effects to the potential GGS habitat located in the drain approximately 50-75 feet southeast of the proposed well #5. Construction activities would not occur in the drain. Specifically, there would not be any removal of aquatic vegetation from the drain as part of this action. Clearing would not occur as part of this action. Water would not be pumped into or from the drain as part of this action. Since drilling activities would occur near the drain, there could be potential noise disturbance,

for a limited time period. The potential effects to GGS and GGS habitat would be minimized by employing the standard avoidance and minimization measures in Section 2.1. In particular, the drain would be flagged and considered an Environmentally Sensitive Area which construction workers should avoid. All construction work for the installation of well #5 will be completed during the snakes active period, between April 1 and October 1. The concise construction period (one week, 24 hours/day) would further minimize or eliminate effects. It is extremely unlikely that snakes are present in or near the action area (CNDDDB, June 2008 Appendix A). The nearest sighting occurred in April 2005, about 5 miles to the east of the action area. There is not suitable habitat connectivity between the nearest sighting and the action area.

Indirect Effects

There will be no indirect effects resulting from the construction and testing of test production well #5.

Effects of interrelated and interdependent actions

There are no interrelated or interdependent actions associated with the proposed action. Agricultural practices and levee and canal maintenance would occur regardless of the proposed action and, therefore, there are no effects of interrelated and interdependent actions to analyze.

Section 5 Determination of Effects

Reclamation has determined that the proposed action may affect, is not likely to adversely affect giant garter snake. The determination is based on the limited duration of construction activity in the action area, lack of presence of GGS in the action area, limited potential GGS habitat, which can be avoided, and lack of habitat connectivity to known GGS populations.

Any effects to GGS or potential GGS habitat would be discountable, or extremely unlikely to occur. Any effects would also be insignificant, since effects can be avoided or minimized to a level where take would not occur.

Section 6 References

EDAW, 2006. Analysis of Effects of the Greenbriar Project on Covered Species, Appendix P to the Draft Environmental Impact Report for the Greenbriar Development Project, Sacramento, California (July 2006) SCH #2005062144 (“Greenbriar Report”).

U.S. Fish & Wildlife Service. 1999. Draft Recovery Plan for the Giant Garter Snake (*Thamnopsis gigas*). U.S Fish and Wildlife Service, Portland, Oregon. ix+192pp.

U.S. Fish & Wildlife Service, 2006. Sacramento Fish and Wildlife Office. Giant Garter Snake (*Thamnopsis gigas*) 5-Year Review: Summary and Evaluation

Section 7 List of Preparers and Reviewers

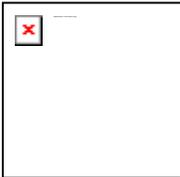
Tamara LaFramboise, Natural Resource Specialist, Bureau of Reclamation, Mid-Pacific Regional Office

Becky Victorine, Natural Resource Specialist, Bureau of Reclamation, Mid-Pacific Regional Office

Thad Bettner, Glenn Colusa Irrigation District

APPENDIX A Species List, Species List Cover Letter, and Figures.

United States Department of the Interior



FISH AND WILDLIFE SERVICE



**Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825**

June 10, 2008

Document Number: 080610060118

Tamara LaFramboise
Bureau of Reclamation
2800 Cottage Way MP-410
Sacramento, CA 95825

Subject: Species List for Glenn-Colusa Irrigation District Stony Creek Fan Aquifer
Performance Testing Plan and Lower Tuscan Intergrated Planning Program

Dear: Ms. LaFramboise

We are sending this official species list in response to your June 10, 2008 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 08, 2008.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division



**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 080610060118

Database Last Updated: January 31, 2008

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio
 - Conservancy fairy shrimp (E)
- Branchinecta lynchi
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
 - valley elderberry longhorn beetle (T)
- Lepidurus packardi
 - vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris
 - green sturgeon (T) (NMFS)
- Hypomesus transpacificus
 - delta smelt (T)
- Oncorhynchus mykiss
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha
 - Central Valley spring-run chinook salmon (T) (NMFS)
 - Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
 - Critical habitat, winter-run chinook salmon (X) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Rana aurora draytonii*
 - California red-legged frog (T)

Reptiles

- *Thamnophis gigas*
 - giant garter snake (T)

Candidate Species

Birds

- *Coccyzus americanus occidentalis*
 - Western yellow-billed cuckoo (C)

Quads Containing Listed, Proposed or Candidate Species:

ORD FERRY (577B)

HAMILTON CITY (578A)

ORLAND (578B)

KIRKWOOD (594C)

FOSTER ISLAND (594D)

County Lists

Listed Species

Invertebrates

- *Branchinecta conservatio*
 - Conservancy fairy shrimp (E)
- *Branchinecta lynchi*
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- *Desmocerus californicus dimorphus*
 - valley elderberry longhorn beetle (T)
- *Lepidurus packardi*

- Critical habitat, vernal pool tadpole shrimp (X)
- vernal pool tadpole shrimp (E)

Fish

- *Acipenser medirostris*
 - green sturgeon (T) (NMFS)
- *Oncorhynchus kisutch*
 - coho salmon, So OR/No CA (T) (NMFS)
 - Critical habitat, coho salmon, So OR/No CA (X) (NMFS)
- *Oncorhynchus mykiss*
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central Valley steelhead (X) (NMFS)
 - Critical habitat, Northern California steelhead (X) (NMFS)
 - Northern California steelhead (T) (NMFS)
- *Oncorhynchus tshawytscha*
 - Central Valley spring-run chinook salmon (T) (NMFS)
 - Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
 - Critical habitat, winter-run chinook salmon (X) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
 - California tiger salamander, central population (T)
- *Rana aurora draytonii*
 - California red-legged frog (T)

Reptiles

- *Thamnophis gigas*
 - giant garter snake (T)

Birds

- *Strix occidentalis caurina*
 - Critical habitat, northern spotted owl (X)
 - northern spotted owl (T)

Plants

- *Chamaesyce hooveri*
 - Hoover's spurge (T)

- *Cordylanthus palmatus*
 - palmate-bracted bird's-beak (E)
- *Orcuttia pilosa*
 - hairy Orcutt grass (E)
- *Tuctoria greenei*
 - Greene's tuctoria (=Orcutt grass) (E)

Candidate Species

Birds

- *Coccyzus americanus occidentalis*
 - Western yellow-billed cuckoo (C)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county

list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the

plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as [critical habitat](#). These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [critical habitat page](#) for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 08, 2008.